As another example of a GUI utilized by the SAN manager of the invention, FIGURE 17 illustrates a display 102 illustrating a panel 104 that includes a containment tree hierarchy having a storage device at the top, and a LUN contained in the storage device at a level beneath the storage device. This provides a convenient visual representation of the LUNs within a storage device. The selection of an object in the panel 104 results in the display of selected attributes of the selected object. For example, in this exemplary illustration, the selection of the displayed LUN results in the display of selected properties of the LUN in another panel 106 vertically separated from the panel 104. These selected LUN attributes include, among other items, the names of the hosts to which the LUN is assigned, the IP addresses and the operating systems of these hosts. In a preferred embodiment, the LUN attributes are displayed in the panel 106 only if the icon representing that LUN is selected in the panel 104. This can minimize the retrieval of information regarding the LUN attributes from a database, which can be a remote database.

Those skilled in the art will appreciate that the formats for the display of the various hosts and storage devices, and the associated LUNs and their attributes are not limited to those presented above. For example, horizontally separated panels rather than vertically separated panel can be utilized to present a LUN and its associated attributes. Further, the selection of the attributes of the storage devices and the LUNs to be displayed to a operator/administrator can be different or can complement those described above.

Use of GUI for LUN Assignment, Unassignment and other Functions

In one aspect, the invention provides a graphical user interface (GUI) in a SAN management environment of the type described above that allows the operator/administrator, to efficiently assign (and unassign) one or more LUNs to each host connected to the SAN. More particularly, the selection of a host and a LUN accessible to that host from a display containing objects representing the host and the LUN results in enabling an Assign function, or an Un-assign function and/or a Re-assign function. The administrator can utilize the enabled functions to assign, un-assign and/or re-assign the LUN to the host.

FIGURE 18 further illustrates this aspect of the invention by presenting a GUI 108 that includes a panel 110 in which a plurality of icons 112a, 112b, 112c, and 112d represent the various managed hosts connected to the SAN. The selection of an icon representing a host, e.g., archi, results in the display of the LUNs accessible to that host in a separate panel 114, which is vertically disposed relative to the panel 110. In this illustrated embodiment, the information regarding the LUNs accessible to the host archi is presented in a table format which includes information regarding the storage capacity of each LUN, its vendor, product id, and revision. In addition, for a selected number of LUNs, a status parameter indicates whether the LUNs are assigned or not assigned to the host, in this case archi.

FIGURE 19 illustrates that the selection of one of the displayed LUNs, namely, the LUN having a unit number 40BFCA34, results in activation of a an Assign LUN button 116 indicating that

the Assign function has been enabled. Hence, the selection of the Assign button 116 results in effecting the assignment of this LUN to the host "archi."

Alternatively, as shown in FIGURE 20, the selection of the displayed LUN having a unit number AC66203, which has been previously assigned to the host archi, results in activation of the Unassign LUN button 118 and Reassign LUN button 120. The operator/administrator can select the activated Unassign function to un-assign this LUN from the host archi. Alternatively, the operator/administrator can select the activated Re-assign function to re-assign the selected LUN to the host archi.

GUI Filtering

The system SAN management system of the invention allows filtering the LUNs displayed in a graphical user interface by utilizing one or more selected criteria. For example, in one embodiment, a set of displayed LUNs can be filtered to provide a display of those LUNs whose capacity exceeds an operator/administrator-defined threshold.

For example, FIGURE 21 illustrates a table 122 of accessible LUNs. FIGURE 22 illustrates the accessible LUNs of FIGURE 21, and it further illustrates an object 124 in the form of a pop-up window that allows the operator/administrator, to enter a criterion for filtering the LUNs. In this illustrated embodiment, the operator/administrator can filter the LUNs based on whether a LUN capacity is greater than or less than a operator/administrator-defined threshold. In this case, the operator/administrator has chosen a value of 5000 kilobytes as capacity threshold. The